

Amendment D to SN 09/879,709

Page 5 of 14

**In the claims:**

Please amend the claims to the following:

1. (currently amended) A tire assembly, comprising:

a ~~safety~~ rim, including a one-piece ring having a generally U-shaped cross-section, an inner surface and an outer surface, and defining left and right recesses on its inner surface;

a tire mounted on said ~~safety~~ rim, said tire including a tread area and left and right edges, wherein said left and right edges are received in said left and right recesses, wherein a hollow space is formed between said tire and said rim; and

a plurality of inflated balls located in said hollow space, wherein each ball has a diameter and extends radially to span the space between the tire and the rim from the tire edges to the tread area;

~~wherein at least some of said balls are~~ said balls being independent of said tire and rim and ~~are~~ free to shift circumferentially relative to said tire and rim, so that, if one of said balls is punctured and deflates, others of said balls can shift circumferentially to help fill the space created by the deflated ball in order to continue providing support to the tire; and

wherein said balls are the most rigid elements that extend radially from the tire edges to span the space between the tire and the rim the tread area.

Amendment D to SN 09/879,709

Page 6 of 14

2.(original) A tire assembly as recited in claim 1, and further comprising a main valve extending through said rim to permit gas to be inserted into and removed from said hollow space through said main valve.

3.(original) A tire assembly as recited in claim 1, wherein at least one of said inflated balls includes a valve which can be used to insert pressurized gas into and remove gas from the interior of said ball to control the internal pressure of said ball.

4.(original) A tire assembly as recited in claim 2, wherein at least one of said balls includes an individual valve which can be used to insert pressurized gas into and remove gas from the interior of said ball to control the internal pressure of said ball.

5.(original) A tire assembly as recited in claim 4, and further comprising a rim lock inside said rim, said rim lock being secured to said rim and pressing said left and right tire edges against said rim.

6.(previously presented) A tire assembly as recited in claim 1, wherein balls within said tire have different internal pressures, with some balls having a lower pressure and others having a substantially higher pressure, such that the lower pressure balls compress more under load than the higher pressure balls, the lower pressure balls and higher pressure balls being arranged at desired

Amendment D to SN 09/879,709

Page 7 of 14

intervals in a repeating pattern in order to create an effect similar to providing knobs on the tire.

7.(original) A tire assembly as recited in claim 1, and further comprising an inflatable tube between said balls and said rim, said inflatable tube including a main valve which is accessible from outside said rim.

8.(original) A tire assembly as recited in claim 1, wherein said balls are made of polyurethane sheets that are welded together, and wherein said balls include individual valves for inflating the balls to a predetermined pressure.

9.(currently amended) A tire assembly, comprising:

a ~~safety~~ rim, including a one-piece ring having an inner surface and an outer surface, and defining left and right recesses on its inner surface;

an opening through said ~~safety~~ rim, and a valve in said opening for controlling the flow of gas through said rim;

a tire mounted on said ~~safety~~ rim and defining an open space between the tire and the rim, said tire including left and right edges received in said left and right recesses, said left and right edges including left and right embedded cords; and

a plurality of gas-filled balls located between said tire and said rim, each of said balls having a wall, and an individual valve which controls the flow of gas through the wall, wherein the pressure of gas on the interior of each ball is

Amendment D to SN 09/879,709

Page 8 of 14

greater than the ambient gas pressure acting on the outside of the ball in order to maintain the ball in an inflated state, wherein ~~at least some of~~ said balls are independent of said rim and tire and are free to shift circumferentially relative to said rim and tire;

wherein each of said balls has a diameter and spans the space between the tire and the rim so that a single layer of balls fills that space;

and wherein the balls are inflated to substantially different internal pressures with lower pressure balls and higher pressure balls arranged at desired intervals in a repeating pattern and with the lower pressure balls deforming more under pressure than the higher pressure balls, so as to provide an effect similar to having knobs on the outer surface of the tire.

10.(original) A tire assembly as recited in claim 9, wherein said balls are made of welded together sheets.

11.(original) A tire assembly as recited in claim 10, wherein said sheets are made of polyurethane.

12.(canceled)

13.(original) A tire assembly as recited in claim 9, and further comprising a rim lock, which presses the embedded cords against the rim.

Amendment D to SN 09/879,709

Page 9 of 14

14.(original) A tire assembly as recited in claim 9, and further comprising an inflatable tube mounted between said balls and said rim, including a main valve accessible through said rim.

15.(previously presented) A tire assembly, comprising:

a rim having a generally U-shaped cross-section, an inner surface and an outer surface, and defining left and right recesses on its inner surface;

a tire mounted on said rim, said tire including left and right edges received in said left and right recesses, wherein a hollow space is formed between said tire and said rim; and

a plurality of inflated balls located in said hollow space, wherein each ball has a diameter and spans the space between the tire and the rim, and wherein each ball can support a load in pounds that is at least as great as one hundred times the cube of its diameter in inches without exceeding its tensile limit and without exceeding its elastic limit, and wherein the wall thickness of said ball is less than three percent of its diameter.

16.(previously presented) A tire assembly as recited in claim 9, wherein each ball can support a load in pounds that is at least as great as one hundred times the cube of its diameter in inches without exceeding its tensile limit and without exceeding its elastic limit, and wherein the wall thickness of said ball is less than three percent of its diameter.

Amendment D to SN 09/879,709

Page 10 of 14

17.(original) A tire assembly as recited in claim 1, wherein said balls are made of polyurethane sheets that are welded together.

18.(previously presented) A tire assembly, comprising:

a rim having a generally U-shaped cross-section, an inner surface and an outer surface, and defining left and right recesses on its inner surface;

a tire mounted on said rim, said tire including left and right edges received in said left and right recesses, wherein a hollow space is formed between said tire and said rim; and

a plurality of inflated balls located in said hollow space, wherein each ball has a diameter and spans the space between the tire and the rim; and

wherein each of said balls comprises:

a thin wall, defining an interior surface and an exterior surface;

wherein the thickness of said thin wall is less than two percent of the diameter, and wherein said ball can support a load in pounds that is at least one hundred times the cube of its diameter in inches without exceeding its tensile limit, without exceeding its elastic limit, and without expanding more than 50% from its initial surface area.

19.(previously presented) A tire assembly as recited in claim 18, wherein said ball includes a valve.

Amendment D to SN 09/879,709  
Page 11 of 14

20.(previously presented) A tire assembly as recited in claim 19, wherein said ball is made of polyurethane.

21.(previously presented) A tire assembly as recited in claim 20, wherein said ball is made of welded-together sheets.

22.(currently amended) A tire assembly, comprising:

a rim having a generally U-shaped cross-section, an inner surface and an outer surface, and defining left and right recesses on its inner surface;

a tire mounted on said rim, said tire including a tread area and left and right edges, said left and right edges being received in said left and right recesses, wherein a hollow space is formed between said tire and said rim;

a plurality of inflated balls located in said hollow space, wherein each ball has a diameter and extends radially to span the space ~~between the tire and the rim~~ from the tire edges to the tread area;

~~at least some of~~ said balls being independent of said tire and rim and free to shift circumferentially relative to said tire and rim, so that, if one of said balls is punctured and deflates, others of said balls can shift circumferentially to help fill the space created by the deflated ball in order to continue providing support to the tire; and

wherein there is nothing more rigid than the balls that also extends radially from the tire edges to span the space between the rim and tire the tread area.